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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
08/971,851	11/17/97	HORNBACK III	L 53249USA5A

IM22/1124
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EXAMINER

TRAN, H

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 11/24/99

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/971,851

Applicant(s)

HORNBACK III ET AL.

Examiner

Hien Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).

Status

- 1) ☒ Responsive to communication(s) filed on 21 September 1999.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 12-27 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 12-27 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claims _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are objected to by the Examiner.
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).
- a) ☐ All b) ☐ Some * c) ☐ None of the CERTIFIED copies of the priority documents have been:
1. ☐ received.
2. ☐ received in Application No. (Series Code / Serial Number) _____.
3. ☐ received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. & 119(e).

Attachment(s)

- 14) ☒ Notice of References Cited (PTO-892)
- 15) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 16) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.
- 17) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 18) ☐ Notice of Informal Patent Application (PTO-152)
- 19) ☐ Other: _____.

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DETAILED ACTION

Claim Rejections - 35 USC § 112

1. Claims 12-27 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

The phrase of "said at least one score-line extending **only** in a direction parallel to the flow of gas through said pollution control element" is nowhere disclosed in the specification.

Applicant is required to cancel the new matter in the reply to this Office action.

2. Claims 12-27 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 12, line 6 --, said sheet material-- should be inserted before "having" for clarity; in line 9 "the flow of gas" has no clear antecedent basis; in lines 8-9 it is unclear as to where it is disclosed in the specification that "said at least one score-line extending **only** in a direction parallel to the flow of gas through said pollution control element".

In claim 26 it is unclear as to what structural limitation applicants are attempting to recite, whether the sheet of material in line 2 is the same as to the sheet material in line 1 and in claim 12, line 5.

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Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 148 USPQ 459, that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or unobviousness.

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6. Claims 12-19, 21-25, 27 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over JP 61-89916.

JP 61-89916 discloses a pollution control device and a method of making a mounting article comprising for a pollution control device:

providing a housing 3 containing a pollution control element 2 and said mounting article 1 disposed between the housing 3 and the pollution control element 2; wherein the mounting article 1 comprising a sheet material 1 having a major top and bottom surfaces, a thickness, a length, a width and having a plurality of score lines in the top and bottom surfaces of the sheet material 1.

With respect to the newly added limitation, JP 61-89916 discloses that the score lines are disposed across the longer direction of the sheet material which appears to be the direction of the gas flowing (Fig. 2) and therefore meets the newly added limitation in the instant claim.

Even if it is not, then it would have been obvious to one having ordinary skill in the art to select an appropriate direction for the score lines, such as parallel to the flow of gas on the basis of its suitability for the intended use as a matter of obvious design choice, since JP 61-89916 discloses that any shape, any number or any arrangement can be used for the score lines and since applicants also admit on page 6, lines 28-31 that the score lines can extend in any direction: across the width or the length, i.e. parallel or perpendicular to the gas flow.

With respect to claims 14-15, 17, JP 61-89916 discloses that the score lines are disposed across the length of the sheet material 1 (see Fig. 1).

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With respect to claim 16, Fig. 1 of JP 61-89916 shows that the depth of the score line appears to be within the range of 5-90% of the thickness of the sheet material 1.

With respect to claim 19, JP 61-89916 discloses that the sheet material 1 is ceramic fiber.

With respect to claims 13, 18, 24-25, JP 61-89916 discloses that the sheet material has at least one score line in the both top and bottom surfaces.

With respect to claim 23, JP 2-61313 discloses that the monolith has round shape (Fig. 2).

With respect to claim 27, the score-line of JP 61-89916 appears to be U-shape (see the groove in Fig. 1).

7. Claims 16, 19-20, 23 are rejected under 35 U.S.C. § 103 as being unpatentable over JP 61-89916 as applied to claims 12-19, 21-25, 27 in view of JP 2-61313.

With respect to claims 16, 20, the depth of the score line of JP 61-89916 appears to be within the range of 5-90% of the thickness of the sheet material and therefore it meets the claims. In any event, it would have been obvious to one having ordinary skill in the art to select an appropriate depth for the score line on the basis of its suitability for the intended use as a matter of obvious design choice, and since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to claim 19, JP 61-89916 discloses that the sheet material comprises ceramic fiber. JP 2-61313 discloses that the sheet material comprises inorganic fiber, vermiculite, etc., i.e. intumescent material.

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With respect to claim 23, JP 2-61313 discloses that the monolith has round shape (Fig. 2).

8. Claim 26 is rejected under 35 U.S.C. § 103 as being unpatentable over JP 61-89916 as applied to claims 12-19, 21-25, 27 in view of Corn (5,332,609).

The apparatus of JP 61-89916 is substantially the same as that of the instant claim, but fails to disclose a second sheet material layer.

However, Corn discloses the conventionality of providing more than one layer for the mat.

It would have been obvious to one having ordinary skill in the art to provide a second layer in the sheet material of JP 61-89916 as taught by Corn so as to prevent from undesired cracking or buckling.

9. Claims 12-25, 27 are rejected under 35 U.S.C. § 103 as being unpatentable over JP 2-61313 in view of JP 61-89916.

JP 2-61313 discloses a pollution control device and a method of making a mounting article comprising for a pollution control device:

providing a housing containing a pollution control element 1 and said mounting article 5 disposed between the housing and the pollution control element 1; wherein the mounting article 5 comprising a sheet material 5 having a major top and bottom surfaces, a thickness, a length, a width and having a plurality of score lines 11 in the top and bottom surfaces of the sheet material 5.

With respect to the newly added limitation, JP 61-89916 discloses that the score lines are disposed across the longer direction of the sheet material which appears to be the direction of the gas

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flowing (Fig. 2). JP 61-89916 also discloses that any shape, any number or any arrangement can be used for the score lines.

It would have been obvious to one having ordinary skill in the art to select an appropriate direction for the score lines, such as parallel to the flow of gas on the basis of its suitability for the intended use as a matter of obvious design choice, since JP 61-89916 discloses that any shape, any number or any arrangement can be used for the score lines and since applicants also admit on page 6, lines 28-31 that the score lines can extend in any direction: across the width or the length, i.e. parallel or perpendicular to the gas flow.

With respect to claims 14, 17-18, JP 2-61313 discloses that the score lines are disposed across the length or width of the sheet material and have length of less than the length of the sheet material (see Fig. 2).

With respect to claim 19, JP 2-61313 discloses that the sheet material is vermiculite.

With respect to claim 13, JP 2-61313 discloses more than one score line.

With respect to claim 15, JP 61-89916 discloses that the score line extends across the length or width of the sheet material and therefore is perpendicular to the width and the length, respectively.

It would have been obvious to one having ordinary skill in the art to select an appropriate length and orientation for the score lines, such as the one taught by JP 61-89916 in the apparatus of JP 2-61313, on the basis of its suitability for the intended use as a matter of obvious design choice.

With respect to claims 16, 20, the depth of the score line of JP 61-89916 appears to be within the range of 5-90% of the thickness of the sheet material and therefore it meets the claims. In any

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event, it would have been obvious to one having ordinary skill in the art to select an appropriate depth for the score line on the basis of its suitability for the intended use as a matter of obvious design choice, and since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233.

With respect to claim 23, JP 61-89916 discloses that both the top and the bottom surfaces of the sheet material have a plurality of score lines.

With respect to claim 24, JP 2-61313 discloses that the sheet material has at least one score line in the bottom surface facing the pollution control element 1 (see Fig. 2).

With respect to claim 27, the score-line of JP 2-61313 appears to be U-shape (see the groove in Fig. 2).

10. Claim 26 is rejected under 35 U.S.C. § 103 as being unpatentable over JP 2-61313 as applied to claims 12-25, 27 in view of Corn (5,332,609).

The same comments with respect to Corn apply.

Response to Arguments

11. Applicant's arguments filed 9/21/99 have been fully considered but they are not persuasive.

Applicants argue that Fig. 2 of the reference JP '916 indicate that the grooves extend transverse to the flow of gas through the pollution control element. Such contention is not persuasive as it is unclear where it is shown in Fig. 2 of JP '916 that the grooves extend transverse to the gas

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flow. It appears that the grooves extend in the length of the mat which is parallel to the direction of the gas flow (see page 3 of the translation of JP '916). Even if it is not, then it would have been obvious to one having ordinary skill in the art to select an appropriate direction for the score lines, such as parallel to the flow of gas on the basis of its suitability for the intended use as a matter of obvious design choice, since JP 61-89916 discloses that any shape, any number or any arrangement can be used for the score lines and since applicants also admit on page 6, lines 28-31 that the score lines can extend in any direction: across the width or the length, i.e. parallel or perpendicular to the gas flow.

Conclusion

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

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13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (703) 308-4253. The examiner can normally be reached on Monday-Thursday from 7:00 AM - 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marian Knode, can be reached on (703) 308-4311. The fax phone number for this Group is (703) 305-3599 (for Official papers after Final), (703) 305-5408 (for other Official papers) and (703) 305-6078 (for Unofficial papers).

When filing a FAX in Group 1700, please indicate in the Header (upper right) "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communication with the PTO that are not for entry into the file of the application. This will expedite processing of your papers.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0661.

HT
November 22, 1999

Hien Tran

**HIEN TRAN
PRIMARY EXAMINER
GROUP 1700**